

CURRICULUM VITAE
Samuel H. Wilson

Date and Place of Birth: August 5, 1939, U.S.A.

Married: 2 children

Education:

1961	A.B. (Chemistry)	University of Denver
1968	M.D.	Harvard University
1968	Postdoctoral Fellowship	Dartmouth Medical School
1970	Postdoctoral Fellowship	NIH

Professional Employment:

1996 - Present	Deputy Director, National Institute of Environmental Health Sciences (NIEHS), NIH, & National Toxicology Program; Chief, DNA Repair and Nucleic Acid Enzymology Workgroup, Laboratory of Structural Biology, NIEHS, NIH
1991 - 1996	Founding Director, Sealy Center for Molecular Science, The University of Texas Medical Branch (UTMB) and Director, Centennial Center for Environmental Toxicology, UTMB
1986 - 1991	Chief, Nucleic Acid Enzymology Section, Laboratory of Biochemistry, National Cancer Institute (NCI), NIH
1970 - 1991	Research Scientist, Laboratory of Biochemistry, NCI, NIH
1968 - 1970	Postdoctoral Fellow (Research Associate) Laboratory of Biochemical Genetics (Advisor - Marshall Nirenberg), National Heart Institute, NIH
1967 - 1968	Postdoctoral Fellow, Department of Biochemistry (Advisor- Mahlon Hoagland), Dartmouth Medical School
1964 - 1966	Student Research Associate, Department of Bacteriology and Immunology (Advisor - Mahlon Hoagland), Harvard Medical School
1961 - 1962	Graduate Fellow, Department of Chemistry (Advisors - J.J. Schmidt - Collerus and J.A. Krimmel), Denver Research Institute, Univ. of Denver

Honors, Research Lectures, & Awards: (since 1996)

1994 - 1996	Jones Distinguished Chair in Environmental Toxicology, UTMB
1994 - 1996	Distinguished Fellow, Houston Advanced Research Center, Houston, TX
1996	Corpus Origoza Lecturer, Baylor College of Medicine, Houston, TX
1996	Plenary Lecture, Beckman Symposium, City of Hope Medical Center
1996	Keynote Speaker, Seno Memorial Symposium, Yokohama, Japan
1997	H.M. Parker Lecturer, Pacific Northwest Natl. Lab, DOE, Richland, WA
1997	Plenary Lecture, Becton Dickinson 100 th Anniversary Symposium
1997	NIH Merit Award (Environmental Genome Project)
1998	Keynote Speaker, AACR Special Meeting, Sanibel Island, FL
1998	NIH Merit Award (Children's Environmental Health Centers)
1999	Keynote Speaker, International Conference on Radiation Damage to DNA: Lesions, Mechanisms, and Consequences, Chapel Hill, NC
1999	Keynote Speaker, Dedication of The Institute of Environmental and Human Health, Texas Tech University

1999	NIH Merit Award (Advanced Research Cooperation in Environmental Health)
1999	NIH Directors' Award (Children's Environmental Health Initiative)
2000	NIH Directors' Award (Advanced Research Cooperation in Environmental Health)
2000	Keynote Speaker, Toxicology Gordon Research Conference
2001	Keynote Speaker, 3 rd Annual Midwest DNA Repair Symposium
2001	Opening Lecturer, Genetic Toxicology Gordon Research Conference
2001	Keynote Speaker, 11 th Annual HHMI Environmental Conference

Military Service:

1968-1992	USPHS Commissioned Corp
1992	Retired - Medical Director (06)

Teaching:

1999	Lecturer, Jerusalem Spring School, The Hebrew University of Jerusalem
1991 - 1996	Professor, Dept. of Human Biological Chemistry & Genetics (HBC&G), UTMB
1994 - 1996	Lecturer, Gene Therapy in Clinical Investigation, GCRC, UTMB
1993 - 1996	Lecturer, Cell and Molecular Biology Course, HBC&G, UTMB
1992 - 1996	Lecturer, Genetics Course, Dept. of Microbiology, UTMB
1975 - 1978	Lecturer, Dept. of Biochemistry, George Washington University
1971 - 1991	Instructor, Biochemistry Faculty, (DNA enzymes and binding proteins), Foundation for Advanced Education in the Sciences, Inc., NIH

Graduate Student Advisor and Thesis Research Supervisor:

Degree in 1978	W. Zellmer, Dept. of Zoology, Auburn University
Degree in 1978	E.W. Bohn, Dept. of Chemistry, American University
Degree in 1985	J. Swack, Dept. of Biochemistry, George Washington University
Degree in 1997	T. Molina, Dept. of HBC&G, UTMB

Member Ph.D. Thesis Defense or Advisory Committee:

2000, B.-Q. Li, Dept. of Biochemistry and Molecular Biology, University of Miami; 1997, A.G. McNees, Dept. of HBC&G, UTMB; 1997, X.-Q. Zhou, Department of Cellular and Structural Biology, University of Texas Health Science Center (San Antonio); 1996, Q. Xie, Dept. of HBC&G, UTMB; 1996, B. Ponnaiya, Dept. of HBC&G, UTMB; 1996, T.K. Varma, Dept. of HBC&G, UTMB; 1995, S. F. Anderson, Dept. of Molecular Biophysics and Biochemistry, Yale University; 1995, N. Deane, Dept. of Microbiology, UTMB ; 1992, R. Anderson, Dept. of Biochemistry, Baylor College of Medicine; 1991, M. Delahunty, Dept. of Chemistry, Univ. of Maryland Balt. Cnty.; 1987, H. Al-Khatib, Dept. of Biochemistry, Georgetown University; 1986, B. Merrill, Dept. of Molecular Biophysics and Biochemistry, Yale University; 1985, A. Lambrianidou, Dept. of Biochemistry, Georgetown University; 1984, W. Albert, Institute of Biochemistry, University of Wurzburg, FRG; 1980, M. Vinocour, Dept. of Biochemistry, University of Arizona.

Postdoctoral Fellows and Research Associates:

1999-2000, D. Kolpachchikov; 1999-2000, G. Belova; 1998-present, M. Ghosh; 1997-2000, A. Robertson; 1998-1999, J. Krahn; 1997-present, B. Vande Berg; 1994-present, R. Sobol; 1994-1996, J. Chyan; 1992-1996, R. Singhal; 1992-1993, R. Kim; 1992-1999, D. Srivastava; 1992-1999, X.-P. Yang; 1991-1996, F. He; 1991-1996, K.-H. Chen; 1991-1993, H. Idriss; 1991-1996, S. Narayan; 1991-1997, R. Prasad; 1991-1993, R. Goel; 1990-1995, M. Jaju; 1990-1997, W. Beard; 1989-1991, J. Casas-Finet; 1989-1991, M. Kim; 1989-1991, A. Kumar; 1989-1991, E. Englander; 1988-1990, C. Majumdar; 1987-1990, P. Kedar; 1987-1991, J. Abbotts; 1986-1991, S. Widen; 1985-1987, P. Kumar; 1984-1987, D. Sen Gupta; 1984-1987, F. Cobianchi; 1982-1984, A. Hazra; 1981-1984, E. Karawya; 1980-1983, S. Planck; 1980-1984, P. Becerra; 1979-1984, S. Detera; 1979-1984, K. Tanabe; 1978-1979, T. Marshall; 1977-1980, Y.-C. Chen; 1975-1976, M. Sivarajan; 1972-1975, A. Matsukage.

Sabbaticals or Senior Associates:

2000-present, M.. Kim; 1997-present, W. Beard; 1997-present, J. Horton; 1997- present, R. Prasad; 1999-present, P. Kedar; 1997, A. Slesarev; 1994-1995 and 1999-2001, O. Lavrik; 1995-1996, and 2002, P. Strauss; 1990, F. Cobianchi; 1985, K. Tanabe; 1984 and 1988, A. Matsukage; 1984-1990, B.Z. Zmudzka.

Reference Volume Editor or Co-Editor:

The Eukaryotic Nucleus: Molecular Biochemistry and Macromolecular Assemblies, Vol. 1-2.

Strauss, P.R., Wilson, S.H. (eds.), The Telford Press/CRC Press, 1990.

Cancer Biology and Biosynthesis. Wilson, S.H. (ed.), CRC Press, 1991.

Base Excision Repair, Progress in Nucleic Acids Research and Molecular Biology. Mitra, S., McCullough, A., Lloyd, R.S., and Wilson, S.H. (eds.), Academic Press, 2001.

Technology-driven Biomarker Development and Application in Environmentally-associated Diseases. Suk, W., and Wilson, S.H. (eds.), In Preparation.

National Peer-Review Activities: (excluding journal reviews, since 1996)

1997 - present	Editorial Board, <i>Environmental Health Perspectives</i>
1996 - present	Editorial Board, <i>The Journal of Biological Chemistry</i>
1999 - 2001	Editorial Board (<i>ad hoc</i>), <i>Annual Reviews</i>
1994 - 2000	Scientific Advisory Panel - The Flinn Foundation, Phoenix, AZ
1992 - 1996	Biochemistry Study Section, DRG, NIH
1992 - 1996	Special Government Employee (Consultant), ORI, DHHS

Committees and Other Activities: (since 1997)

2000 - 2001	Member, ASBMB Council
2000	Co-organizer, International Conference on Arctic Development, Pollution and Biomarkers of Human Health in Conjunction with the Arctic Monitoring and Assessment Programme
2001	Member, Organizing Committee NAS/IOM Roundtable Workshop
2000	Member, Organizing Committee NAS/IOM Roundtable Workshop
1999 - present	Member, NCEH/CDC National Advisory Committee
1999 - present	Member, Research Director's Forum, (HHS, EPA, USDA)

1998 - present	Member, NAS/IOM Roundtable on Environmental Health Science, Research, and Medicine
1997 - 2001	Vice-Chair and Chair, respectively, Mammalian DNA Repair Gordon Research Conference, 1999 and 2001
1997 – 2000	Co-organizer BER Workshop 2000

Invited Scientific Presentations (since 1996):

Environmental Mutagen Society, Victoria, B.C., Canada, March 1996 **Plenary Lecture**
 Processing of DNA Damage, The Netherlands, April 1996, Speaker
 Japanese Society of Biochemistry, Nagoya, Japan, May 1996, **Plenary Lecture**
 Gordon Research Conference, New Hampshire, June 1996, Speaker
 Case Western Reserve University School of Medicine, Cleveland, OH, October 1996
 University of Texas Southwestern Medical School, Dallas, TX, November 1996
 Indiana University School of Medicine, Indianapolis, IN, January 1997
 Gordon Research Conference, Ventura, CA, February 1997, Speaker
 University of Cincinnati Center for Environmental Genetics, Cincinnati, OH, February 1997
 Chemical Industry Institute of Technology, RTP, NC, March 1997
 Environmental Mutagen Society Annual Meeting, Minneapolis, MN, April 1997, Speaker
 Duke University, Durham, NC, May, 1997
 Gordon Research Conference, New London, NH, June 1997, Speaker
 Nelson Institute of Environmental Medicine, New York Univ., NY, September 1997
 North Carolina State University, Raleigh, NC, October 1997
 IATAP Symposium, NIH, Bethesda, MD, November 1997
 University of North Carolina, Chapel Hill, NC, March 1998
 Gordon Research Conference, Plymouth, NH, June 1998, Speaker
 Aspen Cancer Conference, Aspen, CO, July 1998
 NIH Research Festival, NIH, Bethesda, MD, October 1998
 IATAP Symposium, NIH, Bethesda, MD, October 1998
 New York University, NY, November 1998
 Barton Creek Conference, Austin, TX, December 1998
 Gordon Research Conference, Ventura, CA, February 1999, **Vice Chair**, Speaker
 ACS Schilling Research Conference, Santa Cruz, CA, March 1999
 Thomas Jefferson University, Philadelphia, PA, April 1999
 Health Professions Forum, Durham, NC, April 1999
 Eighth Jerusalem Spring School in Life Sciences Symposium, Jerusalem, Israel, May 1999
 Aspen Cancer Conference, Aspen, CO, July 1999
 Gordon Research Conference, Newport, RI, July 1999, Speaker
 Gordon Research Conference, Oxford, UK, August 1999, Session Chair, Speaker
 DNA Damage and Repair Annual Symposium, Wayne State University, Detroit, MI, October 1999
 IATAP Symposium, NIH, Bethesda, MD, November 1999
 DNA Repair and Mutagenesis Conference, ASM, Hilton Head, SC, November 1999, Session Chair, Speaker
 AACR Special Conference on DNA Repair, San Diego, CA, January 2000
 Gordon Research Conference, Ventura, CA, March 2000, Session Chair, Speaker
 BER Workshop 2000, Galveston, TX, March, 2000, **Co-Chair**, Session Chair, Speaker

Curriculum in Toxicology, University of North Carolina Graduate Program, Chapel Hill, NC,
March, 2000

65th Cold Spring Harbor Symposium on Quantitative Biology, Cold Spring Harbor, NY, June
2000, Session Chair, Speaker

Gordon Research Conference, Oxford, UK, August 2000, Session Chair, Speaker

IATAP Symposium, NIH, Bethesda, MD, October 2000

Gordon Research Conference, Ventura, CA, January 2001, **Chair**, Session Chair

University of North Carolina, Chapel Hill, NC, March, 2001

University of Rochester, Rochester, NY, 2001

Extramural Grant Support: (since 1993)

1993	Robert A. Welch Foundation "Nucleotidyltransferase Mechanism for DNA Polymerase," Grant #: H-1265, Principal Investigator (Resigned 9-1-96)
1993	NIH "How Does DNA Alkylation Regulate Human Repair Genes?" Grant #: RO1 ES06492, Principal Investigator (Resigned 9-1-96)
1994	NIH "Mechanism of Human DNA Repair Enzymes: DNA Polymerase β ," Grant #: RO1 ES06839, Principal Investigator (Resigned 9-1-96)
1994	Lucille P. Markey Charitable Trust "Program in Structural Biology," Principal Investigator (Resigned 9-1-96)
1994	NIH "Cellular Response Mechanisms to Environmental Challenge," Grant #: P30 ES06676, Deputy Director . (Resigned 9-1-96)
1995 - 2001	Howard Hughes Medical Institute; International Program "Structure-function relationships of <i>Methanopyrus kandleri</i> DNA topoisomerase V," Principal Investigators: Alexei Slesarev (Russia) and S.H.W.
1995	NIH "Replication of Triplet Repeat Sequences by Eukaryotic DNA Polymerases," Grant #: P01 GM52982, Principal Investigator of one component (Resigned 9-1-96)
1995	Houston Endowment; "Mary Gibbs Jones Distinguished Chair" in Environmental Toxicology (Resigned 8-1-96)
1996	NIH "Oxidative DNA damage in monocytes <i>in vivo</i> and <i>in vitro</i> ," Grant #: P50 HL56992 (pending) Principal Investigator of one component (Resigned 9-1-96)
1997 - 2001	NIH, Intramural AIDS Targeted Antiviral Program, (IATAP), "Structure-Function Studies of HIV-1 Reverse Transcriptase: Enzyme-Nucleic Acid Interactions," Principal Investigator

Bibliography (Peer-reviewed and invited research articles):

1. **Schmidt-Collerus, J.J.**, Krimmel, J.A., Smith, C.D. and Wilson, S.H. Polymerization by the Diels-Alder reaction. University of Denver Research Institute Project Report to Olin-Matheson Corp. for period 1959-1962.
2. **Gray, D.N.**, Bonamo, F., Knight, R., Wilson, S.H. and Schmidt-Collerus, J.J. Synthesis and characterization of ultraviolet radiation absorbers. Progress Reports No. 1-4, 1961-1962 Wright-Patterson Air Development Center, U.S. Air Force 33616-8251. TASK No. 73120.
3. **Wilson, S.H.** and Hoagland, M.B. Studies on the physiology of rat liver polyribosomes I: Quantitation and intracellular distribution of ribosomes. **Proc. Natl. Acad. Sci. USA**, 54:600-607, 1965.
4. **Wilson, S.H.** and Hoagland, M.B. Studies on the physiology of rat liver polyribosomes II: The stability of messenger RNA and ribosomes. **Biochem. J.**, 103:556-566, 1967.
5. **Wilson, S.H.**, Hill, H.Z. and Hoagland, M.B. Studies on the physiology of rat liver polyribosomes III: Protein synthesis by stable polyribosomes. **Biochem. J.**, 103:576-582, 1967.
6. **Wilson, S.H.** Stability of rat liver mRNA. (Doctoral Research Thesis) Harvard University, 1968.
7. **Hoagland, M.B.**, Wilson, S.H. and Quincey, R.V. Some light on the "Membrane RNA" problem. IN: San Pietro, A. and Kenney, F.T. (eds.), **Regulatory Mechanisms for Protein Synthesis in Mammalian Cells**. Academic Press, 1968, pp. 179-181.
8. **Wilson, S.H.** and Quincey, R.V.: Quantitative determination of low molecular weight RNA in rat liver microsomes. **J. Biol. Chem.**, 244:1092-1096, 1969.
9. **Quincey, R.V.** and Wilson, S.H. The utilization of genes for ribosomal RNA, tRNA and 5S RNA in liver cells of adult rats. **Proc. Natl. Acad. Sci. USA**, 64:981-988, 1969.
10. **Blume, A.**, Gilbert, F., Wilson, S.H., Farber, J., Rosenberg, R. and Nirenberg, M. Regulation of acetylcholinesterase in neuroblastoma cells. **Proc. Natl. Acad. Sci. USA**, 67:786-792, 1970.
11. **Wilson, S.H.** and Kronick, M.N. A new assay technique for reactions that produce radioactive gases. **Anal. Biochem.**, 43:460-467, 1971.
12. **Wilson, S.H.**, Schrier, B.K., Farber, J.L., Thompson, E.J., Rosenberg, R.N., Blume, A.J. and Nirenberg, M.W. Markers for gene expression in cultured cells from the nervous system. **J. Biol. Chem.**, 247:3159-3169, 1972.
13. **Hill, H.Z.**, Wilson S.H. and Hoagland, M.B. Patterns of albumin and general protein synthesis in rat liver as revealed by gel electrophoresis. **Biochim. Biophys. Acta.**, 269:477-484, 1972.
14. **Wilson, S.H.** and Kuff, E.L. A novel DNA polymerase activity found in association with intracisternal A-type particles. **Proc. Natl. Acad. Sci. USA**, 69:1531-1536, 1972.
15. **Miller, J.V.**, Jr., Thompson, E.B., Kuff, E.L. and Wilson, S.H. Polydeoxythymidylate inhibition of rabbit reticulocyte RNA dependent protein synthesis in a Krebs II ascites cell system. **Biochem. Biophys. Res. Commun.**, 48:1280-1286, 1972.
16. **Wilson, S.H.**, Kuff, E.L., Bohn, E.W. and Lueders, K.K. Studies on DNA synthesis in murine myeloma II: Activation of latent RNA-dependent DNA polymerase activity in membrane fractions. **Biochem. Biophys. Res. Commun.**, 49:1093-1099, 1972.

17. **Wilson, S.H.**, Kuff, E.L., Bohn, E.W., Lueders, K.K. and Matsukage, A. DNA polymerase in association with intracisternal A-type particles. IN: Wells, R.A. and Inman, R.B. (eds.), **DNA Synthesis In Vitro**. University Park Press, 1973, pp. 361-367.
18. **Stromberg, K.**, Gantt, R. and Wilson, S.H. Structural studies on avian myeloblastosis virus: Conditions for isolation and biochemical characteristics of the core component. **Biochim. Biophys. Acta.**, 304:1-11, 1973.
19. **Miller, J.V., Jr.**, Wilson, S.H., Kuff, E.L. and Thompson, E.B. Inhibition of cell-free globin synthesis by polydeoxythymidylate. **Biochim. Biophys. Acta.**, 294:507-516, 1973.
20. **Thompson, E.J.**, Wilson, S.H., Schuette, W.H., Whitehouse, W.C. and Nirenberg, M.W. Measurement of the rate and velocity of movement by single heart cells in culture. **Amer. J. Card.**, 32:162-166, 1973.
21. **Schrier, B.K.** and Wilson, S.H. Investigation of methods for measurement of radioactivity in tritiated DNA and applications to assays for DNA polymerase activity. **Anal. Biochem.**, 56:196-207, 1973.
22. **Matsukage, A.**, Bohn, E.W. and Wilson, S.H. Multiple forms of DNA polymerase in mouse myeloma. **Proc. Natl. Acad. Sci. USA**, 71:578-582, 1974.
23. **Wilson, S.H.**, Bohn, E.W., Matsukage, A., Lueders, K.K. and Kuff, E.L. Studies on the relationship between deoxyribonucleic acid polymerase activity and intracisternal A-type particles in mouse myeloma. **Biochemistry**, 13:1087-1094, 1974.
24. **Stromberg, K.** and Wilson, S.H. Structural studies of avian myeloblastosis virus: Selective release of ribonucleoprotein polypeptides from the core component and partial purification of the DNA polymerase. **Biochim. Biophys. Acta.**, 361:53-58, 1974.
25. **Minna, J.D.**, Gazdar, A.F., Iverson, G.M., Marshall, T.H., Stromberg, K. and Wilson, S.H. Onconaravirus expression in human-mouse hybrid cells segregating mouse chromosomes. **Proc. Natl. Acad. Sci. USA**, 71:1695-1700, 1974.
26. **Bohn, E.W.**, Matsukage, A. and Wilson, S.H. Stimulation of DNA polymerase activity by the combination of p-hydroxymercuribenzoate and dithiothreitol. **Biochim. Biophys. Res. Commun.**, 59:243-251, 1974.
27. **Bohn, E.W.** and Wilson, S.H. Studies on the activity of the A particle-associated DNA polymerase. **Cancer Res.**, 34:1977-1981, 1974.
28. **Pertel, R.** and Wilson, S.H. Histamine content of the nematode *caenorhabditis elegans*. **Comp. Gen. Pharmac.**, 5:83-85, 1974.
29. **Matsukage, A.**, Bohn, E.W. and Wilson, S.H. Differential sensitivity of low molecular weight DNA polymerase to sulfhydryl-blocking reagents. **Biochim. Biophys. Acta.**, 383:338-343, 1975.
30. **Matsukage, A.**, Bohn, E.W. and Wilson, S.H. On the DNA polymerase III of mouse myeloma: Partial purification and characterization. **Biochemistry**, 14:1006-1020, 1975.
31. **Schrier, B.K.**, Wilson, S.H. and Nirenberg, M. Cultured cell systems and methods for neurobiology. IN: Fleischer, S., Packer, L., and Estabrook, R.W. (eds.), **Methods in Enzymology**. Academic Press, 1976, pp. 765-789.
32. **Schrier, B.K.** and Wilson, S.H. On the measurement of tritium in DNA and its applications to the assay of DNA polymerase activity. IN: Prescott, D.M. (ed.), **Methods in Cell Biology**. Academic Press, 1976, vol. 13, pp. 105-120.
33. **Pitha, J.** and Wilson, S.H. Template specific inhibitor of mammalian DNA polymerases. **Nucleic Acids Res.** 3:825-834, 1976.

34. **Kuff, E.L.**, Lueders, K.K., Orenstein, J. and Wilson, S.H. Differential response of type-C and intracisternal type-A particle markers in cells treated with iododeoxyuridine and dexamethasone. **J. Virol.**, 19:709-716, 1976.
35. **Matsukage, A.**, Sivarajan, M. and Wilson, S.H. Studies on DNA alpha-polymerase of mouse myeloma: Partial purification and comparison of three molecular forms of the enzyme. **Biochemistry**, 15:5305-5314, 1976.
36. **Wilson, S.H.**, Matsukage, A., Bohn, E.W., Chen, Y.C. and Sivarajan, M. Polynucleotide recognition by DNA α -polymerase. **Nucleic Acids Res.**, 4:3981-3996, 1977.
37. **Pitha, J.**, Wilson, S.H. and Pitha, P.M. A vinyl polymer with purine residues deficient in base pairing inhibits murine leukemia virus replication. **Biochem. Biophys. Res. Commun.**, 81:217-223, 1978.
38. **Tanabe, K.**, Bohn, E.W. and Wilson, S.H. Steady-state kinetics of mouse DNA polymerase beta. **Biochemistry**, 18:3401-3407, 1979.
39. **Chen, Y.-C.**, Bohn, E.W., Planck, S.R. and Wilson, S.H. Mouse DNA polymerase alpha: Subunit structure and identification of a species with associated exonuclease. **J. Biol. Chem.**, 254:11678-11687, 1979.
40. **Minna, J.D.**, Marshall, T.H., Brown, S.H., Burk, R.D., Lemon, R.S. and Wilson, S.H. Regulation of expression of type C virion DNA polymerase (reverse transcriptase) in human x mouse and human x rat hybrid cells. **Somatic Cell Genet.**, 5:991-1011, 1979.
41. **Planck, S.R.**, Tanabe, K. and Wilson, S.H. Distinction between mouse DNA polymerases α and β by tryptic peptide mapping. **Nucleic Acids Res.**, 8:2771-2782, 1980.
42. **Planck, S.R.** and Wilson, S.H. Studies on the structure of mouse helix-destabilizing protein-1. **J. Biol. Chem.**, 255:11547-11556, 1980.
43. **Detera, S.D.**, Becerra, S.P., Swack, J. and Wilson, S.H. Studies on the mechanism of DNA polymerase α : Nascent chain elongation, steady state kinetics and the initiation phase of DNA synthesis. **J. Biol. Chem.**, 256:6933-6943, 1981.
44. **Albert, W.**, Grummt, F., Hubscher, U. and Wilson, S.H. Structural homology among calf thymus α -polymerase polypeptides. **Nucleic Acids Res.**, 10:935-946, 1982.
45. **Detera, S.D.** and Wilson, S.H. Studies on the mechanism of *Escherichia coli* DNA polymerase I large fragment: Chain termination and modulation by polynucleotides. **J. Biol. Chem.**, 257:9770-9780, 1982.
46. **Karawya, E.M.** and Wilson, S.H. Studies on catalytic subunits of mouse myeloma α -polymerase. **J. Biol. Chem.**, 257:13129-13134, 1982.
47. **Becerra, S.P.**, Detera, S.D. and Wilson, S.H. Anomalous electrophoretic migration of oligodeoxynucleotides with terminal OH groups: Applications for DNA exonuclease characterization. **Anal. Biochem.**, 129:200-206, 1983.
48. **Tanabe, K.**, Karawya, E., Fewell, J., Kuff, E.L. and Wilson, S.H. DNA polymerase and simian virus 40 infection of resting monkey cell: Induction of a novel aphidicolin resistant DNA polymerase activity. **Nucleic Acids Res.**, 11:8253-8268, 1983.
49. **Karawya, E.**, Swack, J. and Wilson, S.H. Improved conditions for activity gel analysis of DNA polymerase catalytic polypeptides. **Anal. Biochem.**, 135:318-325, 1983.
50. **Detera-Wadleigh, S.**, Karawya, E. and Wilson, S.H. Synthesis of catalytically active DNA polymerase α by *in vitro* translation of calf RNA. IN: Hubscher, U. and Spadani, S. (eds.), **Proteins Involved in DNA Replication**. Plenum Press, 1984, pp. 343-354.
51. **Becerra, S.P.** and Wilson, S.H. Properties of a novel oligonucleotide-releasing bidirectional DNA exonuclease from mouse myeloma. **Biochemistry**, 23:908-914, 1984.

- 52.** **Hazra, A.**, Detera-Wadleigh, S. and Wilson, S.H. Site specific modification of *E. coli* DNA polymerase I large fragment with pyridoxal 5'-phosphate. **Biochemistry**, 23:2073-2078, 1984.
- 53.** **Detera-Wadleigh, S.**, Karawya, E. and Wilson, S.H. Synthesis of DNA polymerase by *in vitro* translation of calf RNA. **Biochem. Biophys. Res. Commun.**, 122:420-427, 1984.
- 54.** **Morstyn, G.**, Russo, A., Carney, D.N., Karawya, E., Wilson, S.H. and Mitchell, J.B. Heterogeneity in the radiation survival curves and biochemical properties of human lung cancer cell lines. **J. Natl. Cancer Inst.**, 73:801-807, 1984.
- 55.** **Karawya, E.**, Swack, J., Albert, W., Fedorko, J., Minna, J.D. and Wilson, S.H. Identification of a higher molecular weigh DNA polymerase alpha catalytic polypeptide in monkey cells by monoclonal antibody. **Proc. Natl. Acad. Sci. USA**, 81:7777-7781, 1984.
- 56.** **Swack, J.**, Karawya, E., Albert, W., Fedorko, J., Minna, J.D. and Wilson, S.H. Properties and applications of new monoclonal antibodies raised against calf DNA polymerase α . **Anal. Biochem.**, 147:10-21, 1985.
- 57.** **Planck, S.R.** and Wilson, S.H. Native species of helix destabilizing protein-I in mouse myeloma identified by antibody probing of Western blots. **Biochem. Biophys. Res. Commun.**, 131:362-369, 1985.
- 58.** **Mitchell, J.B.**, Karawya, E., Kinsella, T.J. and Wilson, S.H. Measurement of DNA polymerase β in skin fibroblast cell lines from patients with ataxia telangiectasia. **Mutation Res.**, 146:295-300, 1985.
- 59.** **Wilson, S.H.**, Cobianchi, F. and Guy, H.R. cDNA cloning and structure-function relationships of a mammalian helix-destabilizing protein: hnRNP particle core protein Al. IN: Thompson, E.B. and Papaconstantinou, J. (eds.), **DNA: Protein Interactions and Gene Regulation**. University of Texas Press, 1987, pp. 129 - 146.
- 60.** **Sharief, F.S.**, Wilson, S.H. and Li, S.S.-L. Identification of the mouse low salt eluting single-stranded DNA-binding protein as a mammalian lactate dehydrogenase-A isoenzyme. **Biochem. J.**, 233:913-916, 1986.
- 61.** **Cobianchi, F.**, SenGupta, D., Zmudzka, B.Z. and Wilson, S.H. Structure of rodent helix destabilizing protein revealed by cDNA cloning. **J. Biol. Chem.**, 261:3536-3543, 1986.
- 62.** **SenGupta, D.N.**, Zmudzka, B.Z., Kumar, P., Cobianchi, F., Skowronski, J. and Wilson, S.H. Sequence of human DNA polymerase β mRNA obtained through cDNA cloning. **Biochem. Biophys. Res. Commun.**, 136:341-347, 1986.
- 63.** **Zmudzka, B.A.**, SenGupta, D., Matsukage, A., Cobianchi, F., Kumar, P. and Wilson, S.H. Structure of rat DNA polymerase beta revealed by partial amino acid sequencing and cDNA cloning. **Proc. Natl. Acad. Sci. USA**, 83:5106-5110, 1986.
- 64.** **Cobianchi, F.** and Wilson, S.H. Enzymatic techniques. IN: Berger, S.L. and Kimmel, A.R. (eds.), **Methods in Enzymology, Guide to Molecular Cloning Techniques**. Academic Press, Inc., 1987, vol. 152, pp. 94-110.
- 65.** **SenGupta, D.N.**, Kumar, P., Zmudzka, B.Z., Couglin, S., Vishwanatha, J.K., Robey, F.A., Parrott, C. and Wilson, S.H. Mammalian α -polymerase: Cloning of partial cDNA and immunobinding of catalytic subunit in crude homogenate protein blots. **Biochemistry**, 26:956-963, 1987.
- 66.** **McBride, O.W.**, Zmudzka, B.Z. and Wilson, S.H. Chromosomal localization of the human gene for DNA polymerase β . **Proc. Natl. Acad. Sci. USA**, 84:503-507, 1987.
- 67.** **Anderson, R.S.**, Lawrence, C.B., Wilson, S.H. and Beattie, K.L. Genetic relatedness of DNA polymerase beta and terminal deoxynucleotidyltransferase. **Gene.**, 60:163-173, 1987.

- 68.** Wilson, S.H., Abbotts, J., and Widen, S. Progress toward the molecular biology of DNA polymerase β . **Biochim. Biophys. Acta.**, 949:149-157, 1988.
- 69.** Abbotts, J., SenGupta, D.M., Zmudzka, B.Z., Widen, S.G. and Wilson, S.H. Human DNA polymerase beta: Expression *E. coli* and characterization of the recombinant enzyme. IN: Moses, R.E. and Summers, W.C. (eds.), **DNA Replication and Mutagenesis**. American Society of Microbiology Press, 1988, pp. 55-67.
- 70.** Cobianchi, F., Karpel, R.L., Williams, K.L., Notario, V. and Wilson, S.H. Mammalian hnRNP complex protein A1: Large-scale overproduction in *E. coli* and cooperative binding to single-stranded nucleic acids. **J. Biol. Chem.**, 263:1063-1071, 1988.
- 71.** Abbotts, J., SenGupta, D.N., Zmudzka, B., Widen, S., Notario, V. and Wilson, S.H. Expression of human DNA polymerase beta in *E. coli* and characterization of the recombinant enzyme. **Biochemistry**, 27:901-909, 1988.
- 72.** Merrill, B.M., Stone, K.L., Cobianchi, F., Wilson, S.H. and Williams, K.R. Phenylalanines that are conserved among several RNA-binding proteins form part of a nucleic acid-binding pocket in the A1 hnRNP protein. **J. Biol. Chem.**, 263:3307-3313, 1988.
- 73.** Jensen, L., Kuff, E.L., Wilson, S.H., Steinberg, A. and Klinman, D. Antibodies from patients and mice with autoimmune diseases react with recombinant hnRNP core protein A1. **J. Autoimmunity**, 1:73-83, 1988.
- 74.** Abbotts, J., SenGupta, D.N., Zon, G. and Wilson, S.H. Studies on the mechanism of *Escherichia coli* DNA polymerase I large fragment: Effect of template sequence and substrate variation on termination of synthesis. **J. Biol. Chem.**, 263: 15094-15103, 1988.
- 75.** Majumdar, C., Abbotts, J., Broder, S. and Wilson, S.H. Studies on the mechanism of human immunodeficiency virus reverse transcriptase: Steady-state kinetics, processivity and polynucleotide inhibition. **J. Biol. Chem.**, 263:15657-15665, 1988.
- 76.** Widen, S., Kedar, P. and Wilson, S.H. Human β -polymerase gene: Structure of the 5' flanking region and active promoter. **J. Biol. Chem.**, 263:16992-16998, 1988.
- 77.** Zmudzka, B.Z., Fornace, A., Collins, J. and Wilson, S.H. DNA polymerase β mRNA: Cell-cycle and growth response in cultured human cells. **Nucl. Acids Res.**, 16:9587-9596, 1988.
- 78.** Nowak, R., Kaczmarek, L., Siedlecki, J.A., Zmudzka, B.Z. and Wilson, S.H. Levels and size complexity of DNA polymerase β mRNA in rat regenerating liver and organs. **Biochem. Biophys. Acta.**, 1008:203-207, 1989.
- 79.** Majumdar, C., Stein, C.A., Cohen, J.S., Broder, S. and Wilson, S.H. Stepwise mechanisms of HIV reverse transcriptase: Primer function of phosphorothioate oligodeoxynucleotide. **Biochemistry**, 28:1340-1346, 1989.
- 80.** Fornace, A., Zmudzka, B., Hollander, M.C. and Wilson, S.H. Induction of DNA polymerase β mRNA by DNA damaging agents in Chinese hamster ovary cells. **Mol. Cell Biol.**, 9:851-853, 1989.
- 81.** Basu, A., Kedar, P., Wilson, S.H. and Modak, M.J. Active site modification of mammalian DNA polymerase β with pyridoxal 5' phosphate: Mechanism of inhibition and identification of a deoxynucleoside 5'-triphosphate binding site residue. **Biochemistry**, 28:6305-6309, 1989.
- 82.** Bebenek, K., Abbotts, J., Roberts, J., Wilson, S.H. and Kunkel, T.A. Specificity and mechanism of error-prone replication by HIV reverse transcriptase. **J. Biol. Chem.**, 264:16948-16956, 1989.

- 83.** Casas-Finet, J.R., Karpel, R.L. and Wilson, S.H. Biophysical studies on the mammalian heterogeneous nuclear ribonucleoprotein Al and its component domains. **SPIE Proceedings, Time-Resolved Laser Spectroscopy in Biochemistry II** 1204:540-547, 1990.
- 84.** Kay, B.K., Sawhney, R.K., and Wilson, S.H. Potential for two isoforms of the Al ribonuclearprotein in *Xenopus laevis*. **Proc. Natl. Acad. Sci. USA**, 87:1367-1371, 1990.
- 85.** Wilson, S.H. Gene regulation and structure-function studies of mammalian β -polymerase. IN: Strauss, P. and Wilson, S. (eds.), **The Eukaryotic Nucleus: Molecular Biochemistry and Macromolecular Assemblies**. The Telford Press, CRC Press, 1990, vol. I, 199-234.
- 86.** McBride, O.W., Kozak, C. and Wilson, S.H. Mapping of the gene for DNA polymerase β on mouse chromosome 8. **Cytogenet. Cell Genet.**, 53:108-111, 1990.
- 87.** Wilson, S.H. hnRNP protein Al and insight on the mechanism of nucleic acid binding. IN: Wilson, S.H. (ed.), **Cancer Biology and Biosynthesis**. CRC Press, 1990, pp. 55-89.
- 88.** Kumar, A., Widen, S.G., Williams, K.R., Kedar, P., Karpel, R.L., and Wilson, S.H. Studies of the domain structure of mammalian DNA polymerase β : Identification of a discrete template binding domain. **J. Biol. Chem.**, 265:2124-2131, 1990.
- 89.** Jeang, K.T., Widen, S.G., Semmes, O.J., IV and Wilson, S.H. HTLV-I-trans-activator protein, Tax, is a trans-repressor of the human β -polymerase gene. **Science**, 247:1082-1084, 1990.
- 90.** Kedar, P.S., Abbotts, J., Kovacs, T., Lesiak, K., Torrence, P., and Wilson, S.H. Mechanism of HIV reverse transcriptase: Enzyme-primer interaction as revealed through kinetic studies of a dNTP analogue, 3' azido dTTP. **Biochemistry**, 29:3603-3611, 1990.
- 91.** Englander, E.W. and Wilson, S.H. Protein binding elements in the human β -polymerase promoter. **Nucleic Acids Res.**, 18:919-928, 1990.
- 92.** Trauger, R.J., Talbott, R., Wilson, S.H., Karpel, R., and Elder, J.H. A single-stranded nucleic acid binding sequence common to the hnRNP Al and murine recombinant virus GP 70. **J. Biol. Chem.**, 265:3674-3678, 1990.
- 93.** Zmudzka, B.Z. and Wilson, S.H. Dereulation of DNA polymerase β by sense and antisense RNA expression in mouse 3T3 cells alters growth rate. **Somatic Cell Molec. Genet.**, 16:311-320, 1990.
- 94.** Kedar, P.S., Lowy, D.R., Widen, S.G., Fornace, A.J., and Wilson, S.H. Transfected human β -polymerase promoter contains a ras responsive element. **Mol. Cell Biol.**, 10:3852-3856, 1990.
- 95.** Kumar, A., Abbotts, J., Karawya, E. and Wilson, S.H. Identification and properties of the catalytic domain of mammalian DNA polymerase beta. **Biochemistry**, 29:7156-7159, 1990.
- 96.** Kumar, A., Casas-Finet, J.R., Luneau, C., Karpel, R., Merrill, B., Williams, K.R. and Wilson, S.H. Nucleic acid binding properties of the C-terminal domain fragment of mammalian hnRNP Al. **J. Biol. Chem.**, 265:17094-17100, 1990.
- 97.** Becerra, P., Clore, G.M., Gronenborn, A.M., Karlstrom, A.R., Stahl, S.J., Wilson, S.H., and Wingfield, P.T. Purification and characterization of the RNase H domain of HIV-1 reverse transcriptase expressed in recombinant *E. coli*. **FEBS Lett.**, 270:76-80, 1990.
- 98.** Kumar, A. and Wilson, S.H. Studies of the strand-annealing activity of mammalian hnRNP complex protein Al. **Biochemistry**, 29:10717-10722, 1990.
- 99.** Chen, K.-H., Widen, S.G., Wilson, S.H. and Huang, K.-P. Characterization of the 5'-flanking region of the rat protein kinase C λ gene. **J. Biol. Chem.**, 265:19961-19965, 1990.

- 100.** Kumar, A. (ed.), **Advances in Molecular Biology and Targeted Treatment of AIDS.** Plenum Press, 1991, pp. 1-19.
- 101.** Baillon, J.G., Kumar, A., Wilson, S.H. and Jerina, D.M. A leucine zipper-like motif may mediate HIV reverse transcriptase subunit binding. **The New Biologist**, 3:1015-1019, 1991.
- 102.** Abbotts, J., Jaju, M. and Wilson, S.H. Thermodynamics of A:G mismatch poly d(G) synthesis by HIV-1 reverse transcriptase. **J. Biol. Chem.**, 266:3937-3943, 1991.
- 103.** Nadler, S.G., Merrill, B.M., Roberts, W.J., Keating, K.M., Lisbin, M.J., Barnett, S.F., Wilson, S.H. and Williams, K.R. Interactions of the A1 heterogeneous nuclear ribonucleoprotein and its proteolytic derivative, UP1, with RNA and DNA: Evidence for multiple RNA binding domains and salt-dependent binding mode transitions. **Biochemistry**, 30:2968-2976, 1991.
- 104.** Kedar, P.S., Widen, S.G., Englander, E.W., Fornace, A.J. and Wilson, S.H. The ATF/CRE site in the β -polymerase promoter mediates the positive effect of MNNG on transcription. **Proc. Natl. Acad. Sci. USA**: 88:3729-3733, 1991.
- 105.** Widen, S.G., and Wilson, S.H. Mammalian β -polymerase promoter: Large-scale purification and properties of ATF/CREB palindrome binding protein from bovine testes. **Biochemistry**, 30:6296-6305, 1991.
- 106.** Englander, E.W., Widen, S.G. and Wilson, S.H. Mammalian β -polymerase promoter: Phosphorylation of ATF/CRE-binding protein and regulation of DNA binding. **Nucleic Acids Res.**, 19:3369-3375, 1991.
- 107.** Egan, W., Boal, J., Iyer, R.P., Storm, C., Wilson, S.H., Meyer, A. and Iversen, P. Abasic oligodeoxyribonucleoside phosphorothioates as inhibitors of the human immunodeficiency virus-1 (HIV-1): Phosphorothioate inhibition of HIV-1 reverse transcriptase and interactions with Syrian hamster fibroblast (V79) cells. **Nucleosides & Nucleotides**, 10:457-460, 1991.
- 108.** Casas-Finet, J.R., Karpel, R.L., Maki, A.H., Kumar, A. and Wilson, S.H. Physical studies of the tyrosine and tryptophan residues in mammalian hnRNP A1 and its constituent domains. **J. Mol. Biol.**, 221:693-709, 1991.
- 109.** Casas-Finet, J.R., Kumar, A., Morris, G., Wilson, S.H. and Karpel, R.L. Spectroscopic studies of the structural domains of mammalian DNA β -polymerase. **J. Biol. Chem.**, 266:19618-19625, 1991.
- 110.** Sobol, R.W., Suhadolnik, R.J., Kumar, A., Lee, B.J., Hatfield, D.L. and Wilson, S.H. Localization of a polynucleotide binding region in the HIV-1 reverse transcriptase: Implication for primer binding. **Biochemistry**, 30:10623-10631, 1991.
- 111.** Becerra, P.S., Kumar, A., Lewis, M.S., Widen, S.G., Karawya E., Abbotts, J., Hughes, S.H., Shiloach, J. and Wilson, S.H. Protein-protein interactions of HIV-1 reverse transcriptase: Implication of central and C-terminal regions in subunit binding. **Biochemistry**, 30:11707-11719, 1991.
- 112.** Wilson, S.H. and Abbotts, J. tRNA in the molecular biology of retroviruses. IN: D.L. Hatfield, B.J. Lee, R.M. Pirtle (eds.), **Transfer RNA in Protein Synthesis**. CRC Press, 1992, pp. 1-21.
- 113.** Abbotts, J. and Wilson, S.H. Inhibitors of HIV-1 reverse transcriptase and fidelity of in vitro DNA replication. **J. Enzyme Inhibition**, 6:35-46, 1992.
- 114.** Knutson, Jay R., Chen, R.F., Porter, D.K., Hensley, P., Han, M.K., Kim, S.J., Wilson, S.H., Clague, M. and Williamson, C.K. Fluorescence quenching in proteins: Some applications to protein-DNA and protein-lipid interactions. **SPIE Proceedings, Time-Resolved Laser Spectroscopy in Biochemistry III** 1640:102-117, 1992.

- 115.** Casas-Finet, J.R., Kumar, A., Karpel, R.L. and Wilson, S.H. Mammalian DNA polymerase β : Characterization of a 16 kDa transdomain fragment containing the nucleic acid-binding activities of the native enzyme. **Biochemistry**, 31:10272-10280, 1992.
- 116.** Englander, E.W. and Wilson, S.H. The cloned promoter of the human DNA β -polymerase gene contains a cAMP response element functional in HeLa cells. **DNA and Cell Biol.**, 11:61-69, 1992.
- 117.** Casas-Finet, J.R., Wilson, S.H. and Karpel, R.L. Selective photochemical modification by trichloroethanol of tryptophan residues in proteins with a high tyrosine-to-tryptophan ratio. **Anal. Biochem.**, 205:27-35, 1992.
- 118.** Jenkins, T.M., Saxena, J.K., Kumar, A., Wilson, S.H. and Ackerman, E.J. DNA polymerase β and DNA synthesis in *Xenopus* oocytes and in a nuclear extract. **Science**, 258:475-478, 1992.
- 119.** Englander, E.W. and Wilson, S.H. Regulation of transcription from the mammalian DNA polymerase β promoter by oncogene proteins. IN: Spandidos, D. (ed.), **Current Perspectives on Molecular and Cellular Oncology**. JAI Press LTD., 1992, Vol IA, 111-129.
- 120.** Englander, E.W. and Wilson, S.H. DNA damage response of cloned DNA β -polymerase promoter is blocked in mutant cell lines deficient in protein kinase A. **Nucleic Acids Research**, 20:5527-5531, 1992.
- 121.** Wilson, S.H., Singhal, R.K. and Kumar, A. Structural and functional studies of mammalian DNA polymerase β . IN: Bohr, W.A., Wassermann, K., Kraemer, K.H. (eds.), **Alfred Benzon Symposium 35: DNA Repair Mechanisms**. 1992, 343-360.
- 122.** Casas-Finet, J.R., Smith, J.D., Kumar, A., Kim, J.G., Wilson, S.H. and Karpel, R.L. Mammalian heterogeneous ribonucleoprotein A1 and its constituent domains. **J. Mol. Biol.**, 229:873-889, 1993.
- 123.** Abbotts, J., Bebenek, K., Kunkel, T.A. and Wilson, S.H. Mechanism of HIV-1 reverse transcriptase: Termination of processive synthesis on a natural DNA template is influenced by the sequence of the template-primer stem. **J. Biol. Chem.**, 268:10312-10323, 1993.
- 124.** Bebenek, K., Abbotts, J., Wilson, S.H. and Kunkel, T.A. Error-prone polymerization by HIV-1 reverse transcriptase: Contribution of template-primer misalignment, miscoding, and termination probability to mutational hot spots. **J. Biol. Chem.**, 268:10324-10334, 1993.
- 125.** Becerra, S.P., Kumar A. and Wilson, S.H. Expression of polypeptides of human immunodeficiency virus-1 reverse transcriptase in *Escherichia coli*. **Protein Expression and Purification**, 4:187-199, 1993.
- 126.** Kawa, S., Kumar, A., Smith, J.S., Becerra, S.P., Beard, W.A., Wilson, S.H. and Thompson, E.B. Expression and purification of the HIV-1 reverse transcriptase using the baculovirus expression vector system. **Protein Expression and Purification**, 4:298-303, 1993.
- 127.** Chen, K-H., Widen, S.G., Wilson, S.H. and Huang, K-P. Identification of a nuclear protein binding element within the rat brain protein kinase C γ promoter that is related to the developmental control of this gene. **FEBS Lett.**, 325(3):210-214, 1993.
- 128.** Kumar, A., Kim, H.R., Sobol, R.W., Becerra, S.P., Lee, B.J., Hatfield, D.L., Suhadolnik, R.J. and Wilson, S.H. Mapping of nucleic acid binding in proteolytic domains of HIV-1 reverse transcriptase. **Biochemistry**, 32(29):7466-7474, 1993.
- 129.** Singhal, R.K. and Wilson, S.H. Short gap-filling synthesis by DNA polymerase β is processive. **J. Biol. Chem.**, 268(21):15906-15911, 1993.
- 130.** Beard, W.A. and Wilson, S.H. Kinetic analysis of template-primer interactions with recombinant forms of HIV-1 reverse transcriptase. **Biochemistry**, 32:9745-9753, 1993.

- 131.** **Prasad, R.**, Kumar, A., Widen, S.G., Casas-Finet, J.R. and Wilson, S.H. Identification of residues in the single-stranded DNA-binding site of the 8-kDa domain of the 8-kDa domain of rat DNA polymerase β by UV cross-linking. **J. Biol. Chem.**, 268:22746-22755, 1993.
- 132.** **Sobol, R.W.**, Fisher, W.L., Reichenbach, N.L., Kumar, A., Beard, W.A., Wilson, S.H., Charubala, R., Pfleiderer, W. and Suhadolnik, R.J. HIV-1 reverse transcriptase: Inhibition by 2', 5'-oligoadenylates. **Biochemistry**, 32:12112-12118, 1993.
- 133.** **Goel, R.**, Beard, W.A., Kumar, A., Casas-Finet, J.R., Strub, M-P., Stahl, S.J., Lewis, M.S., Bebenek, K., Becerra, S.P., Kunkel, T.A. and Wilson, S.H. Structure/function studies of HIV-1 reverse transcriptase: Dimerization defective mutant L289K. **Biochemistry**, 32:13012-13018, 1993.
- 134.** **Prasad, R.**, Widen, S.G., Singhal, R.K., Watkins, J., Prakash, L. and Wilson, S.H. Yeast open reading frame YCR14C encodes a DNA β -polymerase-like enzyme. **Nucleic Acids Research**, 21:5301-5307, 1993.
- 135.** **Prasad, R.**, Casas-Finet, J.R., Karpel, R.L. and Wilson, S.H. Characterization of a 32-residue peptide from rat DNA polymerase β with single-stranded DNA-binding affinity. IN: Crabb J.W. (ed.), **Techniques in Protein Chemistry V**. Academic Press, 1994, 359-369.
- 136.** **Kim, S.-J.**, Lewis, M.S., Knutson, J.R., Porter, D., Kumar, A. and Wilson, S.H. Characterization of the tryptophan fluorescence and hydrodynamic properties of rat DNA polymerase β : Molecular asymmetry and metal-induced conformational change. **J. Mol. Biol.**, 244, 224-235, 1994.
- 137.** **Delahunty, M.D.**, Wilson, S.H. and Karpel, R.L. Studies on primer binding of HIV-1 reverse transcriptase using a fluorescent probe. **J. Mol. Biol.**, 236:469-479, 1994.
- 138.** **Narayan, S.**, Widen, S.G., Beard, W.A. and Wilson, S.H. RNA polymerase II transcription: Rate of promoter clearance is enhanced by a purified activating transcription factor/cAMP response element-binding protein. **J. Biol. Chem.**, 269, 12755-12763, 1994.
- 139.** **Beard, W.A.** and Wilson, S.H. Site-directed mutagenesis of HIV reverse transcriptase to probe enzyme processivity and drug binding. IN: Erickson, J. and Abdel-Meguid, S. (eds.), **Protein Engineering, Current Opinion in Biotechnology**. Current Biology Ltd Press, 1994, 5:414-421.
- 140.** **Prasad, R.**, Beard, W.A. and Wilson, S.H. Studies of gapped DNA substrate binding by mammalian DNA polymerase β : Dependence on 5' phosphate group. **J. Biol. Chem.**, 269:18096-18101, 1994.
- 141.** **Sawaya, M.R.**, Pelletier, H., Kumar, A., Wilson, S.H. and Kraut, J. Crystal structure of rat DNA polymerase β reveals a conserved polymerase catalytic site. **Science**, 264:1930-1935, 1994.
- 142.** **Pelletier, H.**, Sawaya, M.R., Kumar, A., Wilson, S.H. and Kraut, J. Structures of ternary complexes of rat DNA polymerase β , a DNA template-primer, and ddCTP. **Science**, 264:1891-1903, 1994.
- 143.** **Liu, D.**, Derose, E.F., Prasad, R., Wilson, S.H. and Mullen, G.P. Assignments of ^1H , ^{15}N , and ^{13}C resonances for the backbone and side chains of N-terminal domain of DNA polymerase β . Determination of the secondary structure and tertiary contacts. **Biochemistry**, 33:9537-9545, 1994.
- 144.** **Idriss, H.**, Kumar, A., Casas-Finet, J.R., Guo, H., Damuni, Z. and Wilson, S.H. Regulation of *in vitro* nucleic acid strand annealing activity of heterogeneous nuclear ribonucleoprotein protein A1 by reversible phosphorylation. **Biochemistry**, 33:11382-11390, 1994.

- 145.** Chyan, Y-J., Ackerman, S., Shepherd, N.S., McBride, O.W., Widen, S.G., Wilson, S.H., and Wood, T. G. The human DNA polymerase β gene structure. Evidence of alternative splicing in gene expression. **Nuc. Acids Res.**, 22:2719-2725, 1994.
- 146.** Beard, W.A., Stahl, S.J., Kim, H-R., Bebenek, K., Kumar, A., Strub, M-Paule, Becerra, S.P., Kunkel, T.A., and Wilson, S.H. Structure/function studies of human immunodeficiency virus type 1 reverse transcriptase. **J. Biol. Chem.**, 269:28091-28097, 1994.
- 147.** Beard, W.A. and Wilson, S.H. Reverse transcriptase. IN: Karn, J. (ed.), **HIV: A Practical Approach, Volume 2: Biochemistry, Molecular Biology, Drug Discovery**. Oxford University Press, 1995, 15-36.
- 148.** Srivastava, D.K., Rawson, T.Y., Showalter, S.D., Wilson, S.H. Phorbol ester abrogates up-regulation of DNA polymerase β by DNA alkylating agents in Chinese hamster ovary cells. **J. Biol. Chem.**, 270:16402-16408, 1995.
- 149.** Singhal, R.K., Prasad, R., and Wilson, S.H. DNA polymerase β conducts the gap-filling step in uracil-initiated base excision repair in a bovine testis nuclear extract. **J. Biol. Chem.**, 270:949-957, 1995.
- 150.** Narayan, S., Beard, W.A., and Wilson, S.H. DNA damage-induced transcriptional activation of a human DNA polymerase β chimeric promoter: Recruitment of preinitiation complex *in vitro* by ATF/CREB. **Biochemistry**, 34:73-80, 1995.
- 151.** Jaju, M., Beard, W.A. and Wilson, S.H. Human immunodeficiency virus type 1 reverse transcriptase: 3'-Azidodeoxythymidine 5'-Triphosphate inhibition indicates two-step binding for template primer. **J. Biol. Chem.**, 270:9740-9747, 1995.
- 152.** Beard, W.A. and Wilson, S.H. DNA polymerase β . IN: Campbell, J.L. (ed.), **Methods in Enzymology, DNA Replication**. Academic Press, 1995, 262:98-107.
- 153.** Husain, I., Morton, B.S., Beard, W.A., Singhal, R.K., Prasad, R., Wilson, S.H. and Besterman, J.M. Specific inhibition of DNA polymerase β by its 14-kDa domain: Role of single- and double-stranded DNA binding and 5'-phosphate recognition. **Nucleic Acids Research**, 23:1597-1603, 1995.
- 154.** Bebenek, K., Beard, W.A., Casas-Finet, J.R., Kim, H.-R., Darden, T.A., Wilson, S.H. and Kunkel, T.A. Reduced frameshift fidelity and processivity of HIV-1 reverse transcriptase mutants containing alanine substitutions in helix H of the thumb subdomain. **J. Biol. Chem.**, 270:19516-19523, 1995.
- 155.** Horton, J.K., Srivastava, D.K., Zmudzka, B.Z., Wilson, S.H. Strategic down-regulation of DNA polymerase β by antisense RNA sensitizes mammalian cells to specific DNA damaging agents. **Nucleic Acids Research**, 23:3810-3815, 1995.
- 156.** Chen, K-H., Wood, T.G., He, F., Narayan, S. and Wilson, S.H. Bovine DNA polymerase β promoter: Cloning, characterization and comparison with human core promoter. **Gene.**, 164:323-327, 1995.
- 157.** Kunkel, T.A. and Wilson, S.H. Push and pull of base flipping. **Nature**, 384:25-26, 1996
- 158.** Sobol, R.W., Horton, J.K., Kuhn, Ralf, Gu, Hua, Singhal, R., Prasad, R., Rajewsky, K., and Wilson, S.H. Requirement of mammalian DNA polymerase β in base excision repair. **Nature**, 379:183-186, 1996.
- 159.** He, F., Narayan, S. and Wilson, S.H. Purification and characterization of a DNA polymerase β promoter initiator element-binding transcription factor from bovine testis. **Biochemistry**, 35:1775-1782, 1996.

- 160.** Srivastava, D. K., Evans, R. K., Kumar, A., Beard, W. and Wilson, S. H. dNTP binding site in rat DNA polymerase β revealed by controlled proteolysis and azido photoprobe cross-linking. **Biochemistry**, 35:3728-3734, 1996.
- 161.** Beard, W.A., Osheroff, W.P., Prasad, R., Jaju, M., Sawaya, M.R., Wood, T.G., Kraut, J., Kunkel, T.A. and Wilson, S.H. Enzyme-DNA interactions required for efficient nucleotide incorporation and discrimination in human DNA polymerase β . **J. Biol. Chem.**, 271:12141-12144, 1996.
- 162.** Beard, W.A., Minnick, D., Wade, C., Prasad, R., Won, R.L., Kumar, A., Kunkel, T.A. and Wilson, S.H. Role of the "Helix Clamp" in HIV-1 reverse transcriptase catalytic cycling as revealed by alanine-scanning mutagenesis. **J. Biol. Chem.**, 271: 12213-12220, 1996.
- 163.** Liu, D., Prasad, R., Wilson, S.H., DeRose, E.F., and Mullen, G.P. Three-dimensional solution structure of the N-terminal domain of DNA polymerase β . Interaction with a single-stranded DNA oligomer. **Biochemistry**, 35:6188-6200, 1996.
- 164.** Chyan, Y.-J., Strauss, P.R., Wood, T.G. and Wilson, S.H. Identification of novel mRNA isoforms for human DNA polymerase β . **DNA and Cell Biology**, 15:653-659, 1996.
- 165.** Oda, N., Saxena, J. K., Jenkins, T. M., Prasad, R., Wilson, S. H. and Ackerman, E.J. DNA polymerases α and β and DNA repair in an efficient nuclear extract from *Xenopus* oocytes. **J. Biol. Chem.**, 271:13816-13820, 1996.
- 166.** Prasad, R., Singhal, R.K., Srivastava, D.K., Tomkinson, A.E. and Wilson, S.H. Specific interaction of DNA polymerase β and DNA ligase I in a multiprotein base excision repair complex from bovine testis. **J. Biol. Chem.**, 271:16000-16007, 1996.
- 167.** Piersen, C.E., Prasad, R., Wilson, S.H. and Lloyd, R.S. Evidence for an imino intermediate in the DNA polymerase β deoxyribose phosphate excision reaction. **J. Biol. Chem.**, 271:17811-17815, 1996.
- 168.** Narayan, S., He, F. and Wilson, S.H. Activation of the human DNA polymerase β promoter by a DNA-alkylating agent through induced phosphorylation of CREB-1. **J. Biol. Chem.**, 271:18508-18513, 1996.
- 169.** Lavrik, O., Prasad, R., Beard, W.A., Safronov, I.V., Dobrikov, M.I., Srivastava, D.K., Shishkin, G.V., Wood, T.G. and Wilson, S.H. dNTP binding to HIV-1 reverse transcriptase and mammalian DNA polymerase β as revealed by affinity labeling with a photoreactive dNTP analog. **J. Biol. Chem.**, 271:21891-21897, 1996.
- 170.** Pelletier, H., Sawaya, M.R., Wolfle, W., Wilson, S.H. and Kraut, J. Crystal structures of human DNA polymerase β complexed with DNA, implications for catalytic mechanism, processivity, and fidelity. **Biochemistry**, 35:12742-12761, 1996.
- 171.** Pelletier, H., Sawaya, M.R., Wolfle, W., Wilson, S.H. and Kraut, J. A structural basis for metal ion mutagenicity and nucleotide selectivity in human DNA polymerase. **Biochemistry**, 35:12762-12777, 1996.
- 172.** Reha-Krantz, L.J., Nonay, R.L., Day III, R.S. and Wilson, S.H. Replication of O⁶-Methylguanine-containing DNA by repair and replicative DNA polymerases. **J. Biol. Chem.**, 271:20088-20095, 1996.
- 173.** Mullen, G.P. and Wilson, S.H. Repair activity in DNA polymerases: a structurally conserved helix-hairpin-helix motif in base excision repair enzymes and in DNA polymerase β . IN: Hickson, I.D. (ed), **Base Excision Repair of DNA Damage**. Landes Bioscience, 1997, 121-135.

- 174.** Strauss, P.R., Beard, W.A., Patterson, T.A. and Wilson, S.H. Substrate binding by human apurinic/apyrimidinic endonuclease indicates a Briggs-Haldane Mechanism. **J. Biol. Chem.**, 272:1302-1307, 1997.
- 175.** Efrati, E., Tocco, G., Eritja, R., Wilson, S.H., and Goodman, M.F. Abasic translesion synthesis by DNA polymerase β violates the “A-Rule”: Novel types of nucleotide incorporation by human DNA polymerase β at an abasic lesion in different sequence contexts. **J. Biol. Chem.**, 272:2559-2569, 1997.
- 176.** Forgacs, E., Latham, G., Beard, W., Prasad, R., Bebenek, K., Kunkel, T.A., Wilson, S.H. and Lloyd, R.S. Probing structure/function relationships of HIV-1 reverse transcriptase with styrene oxide N²-Guanine adducts. **J. Biol. Chem.**, 272:8525-8530, 1997.
- 177.** Kim, S., Merrill, B.M., Rajpurohit, R., Kumar, A., Stone, K.L., Szer, W., Wilson, S.H., Paik, W.K. and Williams, K.R. Identification of N^G-Methylarginine residues in human heterogeneous RNP protein A1: Phe/Gly-Gly-Arg-Gly-Gly/Phe is a major recognition motif. **Biochemistry**, 35:5185-5192, 1997.
- 178.** Mullen, G.P. and Wilson, S.H. DNA polymerase β in abasic site repair: a structurally conserved helix-hairpin-helix motif in lesion detection by base excision repair enzymes. **Biochemistry**, 36:4713-4717, 1997.
- 179.** Bebenek, K., Beard, W.A., Darden, T.A., Li, L., Prasad, R., Luxon, B.A., Gorenstein, D.G., Wilson, S.H. and Kunkel, T.A. A minor groove binding track in reverse transcriptase. **Nature Struct. Biol.**, 4:194-197, 1997.
- 180.** Butler, A.P., Coleman, A., Johnson, D.G., Dumar, A.P., Narayan, S., Wilson, S.H. and MacLeod, M.C. Disruption of transcription *in vitro* and gene expression *in vivo* by DNA adducts derived from a benzo[a]pyrene diol epoxide located in heterologous sequences. **Carcinogenesis**, 18:239-244, 1997.
- 181.** Mullen, G.P., Antuch, W., Maciejewski, M.W., Prasad, R. and Wilson, S.H. Insights into the mechanism of the β -elimination catalyzed by the N-terminal domain of DNA polymerase β . **Tetrahedron**, 53(35):12057-12066, 1997.
- 182.** Sawaya, M.R., Prasad, R., Wilson, S.H., Kraut, J., and Pelletier, H. Crystal structures of human DNA polymerase β complexed with gapped and nicked DNA: evidence for an induced fit mechanism. **Biochemistry**, 36:11205-11215, 1997.
- 183.** Yang, X-P., He, F., Rawson, T.Y., and Wilson, S.H. Human DNA polymerase β promoter: Phorbol ester activation is mediated through the cAMP response element and cAMP-response-element-binding protein. **J. Biomedical Science**, 4:279-288, 1997.
- 184.** Biade, S., Sobol, R.W., Wilson, S.H. and Matsumoto, Y. Impairment of proliferating cell nuclear antigen (PCNA)-dependent base excision repair on linear DNA. **J. Biol. Chem.**, 273:898-902, 1998.
- 185.** Fortini, P., Pascucci, B., Parlanti, E., Sobol, R. W., Wilson, S. H., and Dogliotti, E. Different DNA polymerases are involved in the short- and long-patch base excision repair in mammalian cells. **Biochemistry**, 37:3575-3580, 1998.
- 186.** Wilson, S.H., Singhal, R.K. and Zmudzka, B.Z. Studies of DNA polymerases in replication-based repeat expansion. IN: Warren, S.T., and Wells, R.D. (eds.), **Genetic Instabilities and Hereditary Neurological Diseases**. Academic Press, 1998, 693-698.
- 187.** Singh, S.B., Beard, W.A., Hingerty, B.E., Wilson, S.H. Broyde, S. Interactions Between DNA Polymerase β and the Major Covalent Adduct of the Carcinogen (+)-*anti*-Benzo[a]Pyrene Diol Epoxide with DNA at a Primer-Template Junction. **Biochemistry**, 37:878-884, 1998.

- 188.** **Chen, K.-H.**, Yakes, F.M., Srivastava, D.K., Singhal, R.K., Sobol, R.W., Horton, J.K., Van Houten, B. and Wilson, S.H. Up-regulation of base excision repair correlates with enhanced protection against a DNA damaging agent in mouse cell lines. **Nucleic Acids Res.**, 26:2001-2007, 1998.
- 189.** **Lavrik, O.I.**, Nasheuer, H.P., Weisshart, K., Wold, M.S., Prasad, R., Beard, W.A., Wilson, S.H. and Favre, A. Subunits of human replication protein A are crosslinked by photoreactive primers synthesized by DNA polymerases. **Nucleic Acids Res.** 26:602-607, 1998.
- 190.** **Kunkel, T.A.** and Wilson, S.H. DNA polymerases on the move. **Nature Structural Biology**, 5:95-99, 1998.
- 191.** **Beard, W.A.** and Wilson, S.H. Structural insights into DNA polymerase β fidelity: Hold tight if you want it right. **Chemistry & Biology**, 5:R7-R13, 1998.
- 192.** **Prasad, R.**, Chyan, Y.J., Beard, W.A., Maciejewski, M.W., Mullen, G.P. and Wilson, S.H. Functional analysis of the amino-terminal 8-kDa domain of DNA polymerase β as revealed by site-directed mutagenesis. DNA binding and 5'-deoxyribose phosphate lyase activities. **J. Biol. Chem.**, 273:11121-11126, 1998.
- 193.** **Wilson, S.H.** and Singhal, R. Mammalian DNA repair and the cellular polymerases. IN: Hoekstra, M.F., and Nickoloff, J.A. (eds.), **DNA Damage and Repair, vol 2.: DNA Repair in Higher Eukaryotes**. Humana Press, 1998, 161-180.
- 194.** **Prasad, R.**, Beard, W.A., Strauss, P. and Wilson, S.H. Human DNA polymerase β deoxyribose phosphate lyase. **J. Biol. Chem.**, 273:15263-15270, 1998.
- 195.** **Wilson, S.H.** Mammalian base excision repair and DNA polymerase β . **Mutation Research-DNA Repair**, 407:203-215, 1998.
- 196.** **Stucki, M.**, Pascucci, B., Parlanti, E., Fortini, P., Wilson, S.H., Hübscher, U. and Dogliotti, E. Mammalian base excision repair by DNA polymerases δ and ϵ . **Oncogene**, 17:835-843, 1998.
- 197.** **Srivastava, D.K.**, Vande Berg, B., Prasad, R., Molina, J.T., Beard, W.A., Tomkinson, A. and Wilson, S.H. Mammalian abasic site base excision repair: Reconstitution *in vitro* with purified enzymes and identification of the reaction sequence and rate determining step. **J. Biol. Chem.**, 273:21203-21209, 1998.
- 198.** **Dimitriadis, E.K.**, Vaske, M.K., Prasad, R., Chen, L., Tomkinson, A., Lewis, M.S. and Wilson, S.H. Thermodynamics of human DNA ligase I trimerization and association with DNA polymerase β . **J. Biol. Chem.**, 273:20540-20550, 1998.
- 199.** **Longley, M.J.**, Prasad, R., Srivastava, D.K., Wilson, S.H., and Copeland, W.C. Identification of 5'-deoxyribose phosphate lyase activity in human DNA polymerase γ and its role in mitochondrial base excision repair. **Proc. Natl. Acad. Sci. USA**, 95:12244-12248, 1998.
- 200.** **Beard, W.A.**, Bebenek, K., Darden, T.A., Li, L., Prasad, R., Kunkel, T.A., and Wilson, S.H. Vertical-scanning mutagenesis of a critical tryptophan in the minor groove binding track of HIV-1 reverse transcriptase. **J. Biol. Chem.**, 273:30435-30442, 1998.
- 201.** **Osheroff, W. P.**, Jung, H. K., Beard, W. A., Wilson, S. H., and Kunkel, T. A. The fidelity of DNA polymerase β during distributive and processive DNA synthesis. **J. Biol. Chem.**, 274:3642-3650, 1999.
- 202.** **Srivastava, D.K.**, Husain, I., Arteaga, C.L., and Wilson, S.H. DNA polymerase β expression differences in selected human tumors and cell lines. **Carcinogenesis**, 20:1049-1054, 1999.

- 203.** **Ochs, K.**, Sobol, R.W., Wilson, S.H., and Kaina, B. Cells deficient in DNA polymerase β are hypersensitive to alkylating agent-induced apoptosis and chromosomal breakage. **Cancer Research**, 59:1544-1554, 1999.
- 204.** **Dianov, G.L.**, Prasad, R., Wilson, S.H. and Bohr, V.A. Role of DNA polymerase β in the excision step of long patch mammalian base excision repair. **J. Biol. Chem.**, 274:13741-13742, 1999.
- 205.** **Efrati, E.**, Tocco, G., Eritja, R., Wilson, S.H., and Goodman, M.F. "Action-at-a-distance" mutagenesis: 8-oxo-7, 8-dihydro-2'-deoxyguanosine causes base substitution errors at neighboring template sites when copied by DNA polymerase β . **J. Biol. Chem.**, 274:15920-15926, 1999.
- 206.** **Powell, M.D.**, Beard, W.A., Bebenek, K., Howard, K.J., Le Grice, S.F.J., Darden, T.A., Kunkel, T.A., Wilson, S.H., and Levin, J.G. Residues in the α H and α I helices of the HIV-1 reverse transcriptase thumb subdomain required for the specificity of RNase H-catalyzed removal of the polypurine tract primer. **J. Biol. Chem.**, 274:19885-19893, 1999.
- 207.** **Osheroff, W.P.**, Beard, W.A., Wilson, S.H. and Kunkel, T.A. Base substitution specificity of DNA polymerase β depends on interactions in the DNA minor groove. **J. Biol. Chem.**, 274:20749-20752, 1999.
- 208.** **Idriss, H.**, Kawa,S., Damuni, Z., Thompson, E.B., and Wilson, S.H. HIV-1 reverse transcriptase is phosphorylated *in vitro* and in a cellular system. **International J. Biochemistry & Cell Biol.**, 31,1443-1452, 1999.
- 209.** **Lewis, D.A.**, Bebenek, K., Beard, W.A., Wilson, S.H. and Kunkel, T.A. Uniquely altered DNA replication fidelity conferred by an amino acid change in the nucleotide binding pocket of HIV-1 reverse transcriptase. **J. Biol. Chem.**, 274:32924-32930, 1999.
- 210.** **Robertson, A.** and Wilson, S.H. Complementary DNA. IN: Creighton, T.E. (ed.), **Encyclopedia of Molecular Biology**. John Wiley & Sons, 1999, 1:532-540.
- 211.** **Horton, J.K.**, Prasad, R., Hou, E.W., Wilson, S.H. Protection against methylation-induced cytotoxicity by DNA polymerase β -dependent long patch base excision repair. **J. Biol. Chem.**, 275:2211-2218, 2000.
- 212.** **Prasad, R.**, Dianov, G.L., Bohr, V.A., and Wilson, S.H. FEN1 Stimulation of DNA polymerase β mediates an excision step in mammalian long patch base excision repair. **J. Biol. Chem.**, 275:4460-4466, 2000.
- 213.** **Narayan, S.** and Wilson, S.H. Kinetic analysis of Sp1-mediated transcriptional activation of a TATA-containing promoter. **Biochemistry**, 39:818-823, 2000.
- 214.** **Miller, H.**, Prasad, R., Wilson, S.H., Johnson, F. and Grollman, A.P. 8-OxodGTP incorporation by DNA polymerase β is modified by active-site residues Asn279. **Biochemistry**, 39:1029-1033, 2000.
- 215.** **Maciejewski, M.W.**, Liu, D., Prasad, R., Wilson, S.H., and Mullen, G.P. Backbone dynamics and refined solution structure of the N-terminal domain of DNA polymerase β . Correlation with DNA binding and dRP lyase activity. **J. Mol. Biol.**, 296:229-253, 2000.
- 216.** **Wilson, S.H.** and Kunkel, T.A. Passing the Baton in Base Excision Repair. **Nature Structural Biology**, 7:176-178, 2000.
- 217.** **Patterson, T.A.**, Little, W., Cheng, X-B., Widen, S.G., Kumar, A., Beard, W.A. and Wilson, S.H. Molecular cloning and high-level expression of human polymerase β cDNA and comparison of the purified recombinant human and rat enzymes. **Protein Expression & Purification**, 18:100-110, 2000.

- 218.** Deterding, L., Prasad, R., Mullen, G., Wilson, S.H. and Tomer, K. Mapping of the 5'-2-deoxyribose-5-phosphate lyase active site in DNA polymerase β by mass spectrometry. **J. Biol. Chem.**, 275:10463-10471, 2000.
- 219.** Chen, K.H., Srivastava, D.K., Singhal, R.K., Jacob, S., Ahmed, A.E., and Wilson, S.H. Modulation of DNA base excision repair by oxidized low density lipoprotein and antioxidants in mouse monocytes. **Carcinogenesis**, 21:1017-1020, 2000.
- 220.** Marintchev, A., Robertson, A., Dimitriadis, E.K., Prasad, R., Wilson, S.H., and Mullen, G.P. Domian Specific interaction in the XRCC1-DNA polymerase β complex. **Nucleic Acids Res.**, 28:2049-2059, 2000.
- 221.** Sobol, R.W., Prasad, R., Evenski, A., Baker, A., Yang, X.-P., Horton, J.K., Wilson, S.H. The lyase activity of DNA repair protein β -polymerase protects from DNA-damage-induced cytotoxicity. **Nature**, 405:807-810, 2000.
- 222.** Latham, G.J., Forgacs, Beard, W.A., Prasad, R., Bebenek, K., Kunkel, T.A., Wilson, S.H., and Lloyd, R.S. Vertical-scanning mutagenesis of a critical tryptophan in the "minor groove binding track" of HIV-1 reverse transcriptase. **J. Biol. Chem.**, 275:15025-15033, 2000.
- 223.** Beard, W.A., and Wilson, S.H. Structural design of a eukaryotic DNA repair polymerase: DNA polymerase β . **Mutation Research - DNA Repair (special issue, Structure of DNA Repair Enzymes)**, 460:231-244, 2000.
- 224.** Osheroff, W.P., Beard, W.A., Yin, S., Wilson, S.H., and Kunkel, T.A. Minor groove interactions at the DNA polymerase β active site modulate single-base deletion error rates. **J. Biol. Chem.**, 275:28033-28038, 2000.
- 225.** Narayan, S., and Wilson, S.H. Kinetic analysis of Sp1-mediated transcriptional activation of the human DNA polymerase β promoter. **Oncogene**, 19:4729-4735, 2000.
- 226.** Li, L., Pedersen, L.G., Beard, W.A., Bebenek, K., Wilson, S.H., Kunkel, T.A. and Darden, T.A. A molecular dynamics model of HIV-1 reverse transcriptase complexed with DNA: Comparison with experimental structures. **J. Molecular Modeling**, 6:575-586, 2000.
- 227.** Podlutsky, A.J., Dianova, I.I., Wilson, S.H., Bohr, V.A., and Dianov, G.L. DNA synthesis and dRPase activities of polymerase β are both essential for single-nucleotide patch base excision repair in mammalian cell extracts. **Biochemistry**, 40:809-813, 2001.
- 228.** Vande Berg, B.J., Beard, W.A., and Wilson, S.H. DNA structure and aspartate 276 influence nucleotide binding to human DNA polymerase β . **J. Biol. Chem.**, 276:3408-3416, 2001.
- 229.** Zhou, J., Ahn, J., Wilson, S.H., and Prives, C. A role for p53 in base excision repair. **EMBO J.**, 20:914-923, 2001.
- 230.** Srivastava, D.K., Tendler, C.L., Milani, D., English, M.A., Licht, J.D., and Wilson, S.H. The HIV transactivator protein Tat is a potent inducer of the human DNA repair enzyme polymerase β . **AIDS**, 15:433-440, 2001.
- 231.** Bebenek, K., Tissier, A., Frank, E.G., McDonald, J.P., Prasad, R., Wilson, S.H., Woodgate, R., and Kunkel, T.A. 5'-Deoxyribose phosphate lyase activity of human DNA polymerase ι *in vitro*. **Science**, 291:2156-2159, 2001.
- 232.** Belova, G.I., Prasad, R., Kozyavkin, S.A., Lake, J.A., Wilson, S.H., and Slesarev, A.I. A type IB topoisomerase with DNA repair activities. **Proc. Natl. Acad. Sci. USA**, 98:6015-6020, 2001.

233. **Wilson, S.H.**, Sobol, R.W., Beard, W.A., Horton, J.K., Prasad, R., and Vande Berg, B.J. DNA β -polymerase and mammalian base excision repair. IN: **Cold Spring Harbor Symposia on Quantitative Biology**, Cold Spring Harbor Laboratory Press, 65:143-155, 2001
234. **Sobol, R.W.**, and Wilson, S.H. Mammalian DNA β -polymerase in base excision repair of alkylation damage. IN: Mitra, S., McCullough, A., Lloyd, R.S., and Wilson, S.H. (eds.), **Base Excision Repair, Progress in Nucleic Acids Research and Molecular Biology**. Academic Press. In Press.
235. **Lavrik, O.L.**, Prasad, R., Sobol, R.W., Horton, J.K., Ackerman, E., and Wilson, S.H. Photoaffinity labeling of mouse fibroblast enzymes by a base excision repair intermediate: Evidence for the role of poly(ADP-ribose) polymerase-1 in DNA repair. **Journal of Biological Chemistry**, In Press.
236. **Prasad, R.**, Lavrik, O., Vande Berg, B., Yang, X.-P., and Wilson, S. DNA polymerase β -mediated long patch base excision repair: Poly(ADP-ribose) polymerase-1 stimulates strand displacement DNA synthesis. **J.Biol. Chem.**, In Press.

Articles Submitted or in Revision:

- 237.** **Lutz, M. J.**, Horlacher, J., Beard, W. A., Wilson, S. H., and Benner, S. A. Incorporation of a non-standard base pair by mutant forms of human DNA polymerase β .
- 238.** **Chyan, Y.-J.**, Rawson, T., and Wilson, S.H. cDNA cloning and characterization of a novel member of the human ATF/CREB family: ATF2d, a negative regulator of the human DNA polymerase β promoter.
- 239.** **Chary, P.**, Jabil, R.J., Harris, C.M., Harris, T.M., Beard, W.A., Prasad, R., Wilson, S.H., and Lloyd, R.S. Interactions of HIV-1 reverse transcriptase on duplex DNA adducted with stereoisomeric bulky major groove lesions on the primer or template strand.
- 240.** **Sobol, R.W.**, Watson, D.E., Nakamura, J., Yakes, F.M., Hou, E., Horton, J.K., Van Houten, B., Swenberg, J.A., Tindall, K.R., Gold, B., Samson, L., and Wilson, S.H. Mutator phenotype associated with a gene-environment interaction: Effect of base excision repair deficiency and methylation-induced genotoxic stress.
- 241.** **He, F.**, Yang, X.-P., Srivastava, D., and Wilson, S.H. CREB-1-dependent Induction of DNA Polymerase β in response to DNA alkylating agents.
- 242.** **Lavrik, O.L.**, Kolpashchikov, D.M., Sobol, R.W., Prasad, R., and Wilson, S.H. Binary system of photoaffinity labeling. Implication for identification of DNA polymerases.
- 243.** **Chen, K.-H.**, Srivastava, D.K., and Wilson, S.H. Relationship between DNA polymerase β -dependent base excision repair and DNA alkylating agent sensitivity in a mouse monocyte cell line.
- 244.** **Dianova, I.I.**, Prasad, R., Wilson, S.H., Bohr, V.A., and Dianov, G.L. Interaction of human FEN1 with APE1 stimulates an excision step in long patch base excision repair.
- 245.** **Yang, L.**, Beard, W.A., Wilson, S.H., Broyde, S., Schlick, T. Polymerase β simulations reveal that Arg258 Rotation is a slow step rather than large subdomain motions *per se*.
- 246.** **Krahn, J.M.**, Beard, W.A., Miller, H., Grollman, A.P., and Wilson, S.H. DNA polymerase fl active site imposes structural constraints on the coding potential of 8-oxodeoxyguanine, Nat. Struct. Biol.
- 247.** **Horton, J.K.**, Baker, A., Vande Berg, B.J., Sobol, S.W., and Wilson, S.H. Involvement of DNA polymerase β in protection against the cytotoxicity of oxidative DNA damage.

Administrative Articles and Speeches Since 1997:

Cannon, W. A summary of the symposium on the environmental genome project. **Wilson, S.H.** (ed.). NIEHS/NIH, Bethesda, Maryland, October 17-18, 1997

Wilson, S.H. Response: Environmental genome project. **Environmental Health Perspectives**, 106:A368-A369, 1998.

Piver, W.T., and Wilson, S.H. Impacts of climate change on human health: Future research directions. **World Resource Review**, 11:325-336, 1999.

Wilson, S.H. Environmental medicine at a crossroad and our nation's health. **Environmental Health Perspectives**, 108:56, 2000.

Wilson, S.H., Merkle, S., Brown, D., Moskowitz, J., Hurley, D., Brown, D., Bailey, B.J., McClain, M., Misenheimer, M., Buckalew, J., and Burks, T. Biomedical Research Leaders: Report on Needs, Opportunities, Difficulties, Education and Training, and Evaluation. Wilson, S.H. (ed.). **Environmental Health Perspectives**, 108:979-995, 2000.

Wilson, S.H., and Merkle, S. Introduction, vision, and future trends in the research environment. IN: Biomedical Research Leaders: Report on Needs, Opportunities, Difficulties, Education and Training, and Evaluation. **Environmental Health Perspectives**, 108:979-980, 2000.

Wilson, S.H. Executive Summary IN: Biomedical Research Leaders: Report on Needs, Opportunities, Difficulties, Education and Training, and Evaluation. **Environmental Health Perspectives**, 108:993-994, 2000.

Wilson, S.H. "By Working Together, Communities and Scientists Can Make a Difference." Speech at Texas Tech University System, Lubbock, Texas, December 6, 1999

Wilson, S.H. Working together: Communities and scientists can make a difference. **Lubbock Magazine**, 6, 44, 2000.

Olden, K., and Wilson, S.H. Environmental health and genomics: Visions and implication. **Nature Reviews-Genetics**, 1:149-153, 2000.

Wilson, S.H., "US/Mexico Border Environmental Health: Communities Can Make a Difference." Speech at the UCSD US/Mexico Border Research Meeting, La Jolla, California, June 12, 2000.

Wilson, S.H., "Community-based Research and Outreach in Environmental Health Research." Proceedings from: Scientific Symposium on Exposures to Environmental Contaminants Affecting Children. Cedar Creek, Texas, October 28, 2000.

Wilson, S.H., "New Tools for Environmental Health in the Genomics Era." Proceedings from: Scientific Symposium on Exposures to Environmental Contaminants Affecting Children. Cedar Creek, Texas, October 28, 2000.

Wilson, S.H., Federal Perspective Panel Questions. Proceedings from: Scientific Symposium on Exposures to Environmental Contaminants Affecting Children. Cedar Creek, Texas, October 28, 2000.

Wilson, S.H., Introduction: Charge to participants. IN: Hanna, K. and Coussens, C. (eds.), **Rebuilding the Unity of Health and the Environment - A New Vision of Environmental Health for the 21st Century**. A Workshop Summary for the Roundtable on Environmental Health Sciences, Research, and Medicine. Washington, D.C.: National Academy Press, 2001; 4-5.

Wilson, S.H., "Gene-Environment Interactions as the New Research Model in Environmental Health." Written Senate Hearing Testimony for Senate Environment and Public Works Committee. Garden City, Long Island, New York, June 11, 2001.

Wilson, S.H., "Gene-Environment Interactions as the New Research Model in Environmental Health." Oral Testimony before Senate Environment and Public Works Committee. Garden City, Long Island, New York, June 11, 2001.

Suk, W.A., and Wilson, S.H. Introduction: Biomarkers in Pursuit of Environmental Health. IN: Suk, W.A., and Wilson, S.H. (eds.), **Technology-driven Biomarker Development and Application in Environmentally-associated Diseases**.

More information can be found at <http://www.niehs.nih.gov/ododd/wilson.htm>.